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CLAIMS

1. A camera comprising: an objective lens where an imaging light enters; and image pickup means that receives the imaging light  
5 directed after being passed through said objective lens to form an image, the image pickup means having a photosensitive surface, the photosensitive surface having different kinds of elements arranged in an array that are for generating predetermined signals in response to light in different wavelengths,

10 said objective lens being adapted to receive imaging lights from each of a plurality of subject surface segments located at different depths from said photosensitive surface and form an image on said photosensitive surface using chromatic aberration, each of the imaging lights having wavelength identical to one of said  
15 different wavelengths and being different from each other.

2. A camera comprising: an objective lens where an imaging light enters; image pickup means having a photosensitive surface that receives the imaging light directed after being passed through said  
20 objective lens to form an image, the photosensitive surface having different kinds of elements arranged in an array that are for generating predetermined signals in response to light in different wavelengths; and image processing means for generating image data that are used to produce, on a predetermined display, an image taken  
25 by said image pickup means according to received said signal to send them to the outside,

said objective lens being adapted to receive imaging lights from each of a plurality of subject surface segments located at different depths from said photosensitive surface and form an image

on said photosensitive surface using chromatic aberration, each of the imaging lights having wavelength identical to one of said different wavelengths and being different from each other,

said image processing means being adapted to generate, according to said signal generated by said different kinds of elements, image data with which the same number of a plurality of images produced by the same kind of said elements are provided as the number of said elements.

3. The camera as claimed in Claim 2, wherein said image processing means is adapted to generate said image data with which said plurality of images generated by the same kind of said elements can be produced as separated images on the predetermined display.

4. The camera as claimed in Claim 3, wherein said image processing means is adapted to generate said image data with which all of said plurality of images generated by the same kind of said elements can be produced at the same time on the predetermined display.

5. The camera as claimed in Claim 2, wherein said image processing means is adapted to generate said image data with which either of said plurality of images generated by the same kind of said elements can be selectively produced on the predetermined display.

6. The camera as claimed in Claim 2, wherein said image processing means is adapted to generate said image data with which a single image that is formed according to said plurality of images

generated by the same kind of said elements can be produced on the predetermined display.

7. A camera comprising: an objective lens where an imaging light enters; image pickup means having a photosensitive surface that receives the imaging light directed after being passed through said objective lens to form an image, the photosensitive surface having different kinds of elements arranged in an array that are for generating predetermined signals in response to light in different wavelengths; and image processing means for generating image data that are used to produce, on a predetermined display, an image taken by said image pickup means according to received said signal to send them to the outside,

said objective lens being adapted to receive imaging lights from each of a plurality of subject surface segments located at different depths from said photosensitive surface and form an image on said photosensitive surface using chromatic aberration, each of the imaging lights having wavelength identical to one of said different wavelengths and being different from each other,

said image processing means being adapted to generate, according to said signal generated by said different kinds of elements, said image data with which images in colors of only the same hue can be produced on a predetermined display.

8. A camera comprising: an objective lens where an imaging light enters; image pickup means having a photosensitive surface that receives the imaging light directed after being passed through said objective lens to form an image, the photosensitive surface having different kinds of elements arranged in an array that are for

generating predetermined signals in response to light in different wavelengths; and image processing means for generating image data that are used to produce, on a predetermined display, an image taken by said image pickup means according to received said signal to  
5 send them to the outside,

said objective lens being adapted to receive imaging lights from each of a plurality of subject surface segments located at different depths from said photosensitive surface and form an image on said photosensitive surface using chromatic aberration, each  
10 of the imaging lights having wavelength identical to one of said different wavelengths and being different from each other,

said image processing means being adapted to generate, according to said signal generated by said different kinds of elements, said image data with which achromatic images can be  
15 produced on a predetermined display.

9. The camera as claimed in Claim 1, 2, 7, or 8, wherein said plurality of subject surface segments are separated from their adjacent subject surface segment at a generally equal distance.

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10. The camera as claimed in Claim 1, 2, 7, or 8, wherein said plurality of subject surface segments are separated from their adjacent subject surface segment at a distance not larger than the depth of field of said objective lens.

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11. The camera as claimed in Claim 1, 2, 7, or 8, wherein said different kinds of elements are the following three kinds of elements: the element that is sensitive to the light in the red spectral region, the element that is sensitive to the light in the

green spectral region, and the element that is sensitive to the light in the blue spectral region, said plurality of subject surface segments are three kinds subject surface segments in which each of the light in the red spectral region therefrom, the light in the green spectral region therefrom, and the light in the blue spectral region therefrom is focused through said objective lens to form an image on said photosensitive surface.

12. An image processor that is used in combination with a camera comprising: an objective lens where an imaging light enters; image pickup means having a photosensitive surface that receives the imaging light directed after being passed through said objective lens to form an image, the photosensitive surface having different kinds of elements arranged in an array that are for generating predetermined signals in response to light in different wavelengths; and output means that sends, to the outside, received said signal, said objective lens being adapted to receive imaging lights from each of a plurality of subject surface segments located at different depths from said photosensitive surface and form an image on said photosensitive surface using chromatic aberration, each of the imaging lights having wavelength identical to one of said different wavelengths and being different from each other, the image processor being adapted to provide the control to produce, on a predetermined display, an image according to said signal received from said output means,

the image processor comprising: means for receiving said signal; processing means for generating, according to received said signal, image data with which the same number of a plurality of images produced by the same kind of said elements can be produced

on said display as the number of said elements; and means for sending, to the outside, generated said image data to said display means.

13. The image processor as claimed in Claim 12, wherein said  
5 processing means is adapted to generate said image data with which said plurality of images generated by the same kind of said elements can be produced as separate images on said display.

14. The image processor as claimed in Claim 12, wherein said  
10 processing means is adapted to allow simultaneous production of all of said plurality of images generated by the same kind of said elements on said display.

15. The image processor as claimed in Claim 12, wherein said  
15 processing means is adapted to allow selective production of either of said plurality of images generated by the same kind of said elements.

16. The image processor as claimed in Claim 12, wherein said  
20 processing means is adapted to allow production of an image on said display, the image being generated by overlapping said plurality of images generated by the same kind of said elements.

17. The image processor as claimed in Claim 12, wherein said  
25 processing means is adapted to allow production of an image on said display, the image being generated by converting said plurality of images generated by the same kind of said elements and then overlapping them.

18. The image processor as claimed in Claim 12, wherein said processing means is adapted to generate, according to said signal generated by said different kinds of elements, said image data with which images in colors of only the same hue can be produced on said display.

19. The image processor as claimed in Claim 12, wherein said processing means is adapted to generate, according to said signal generated by said different kinds of elements, said image data with which achromatic images can be produced on said display.

20. An image data processing method to be carried out in an image processor having a computer, the image processor being used in combination with a camera comprising: an objective lens where an imaging light enters; image pickup means having a photosensitive surface that receives the imaging light directed after being passed through said objective lens to form an image, the photosensitive surface having different kinds of elements arranged in an array that are for generating predetermined signals in response to light in different wavelengths; and output means that sends, to the outside, received said signal, said objective lens being adapted to receive imaging lights from each of a plurality of subject surface segments located at different depths from said photosensitive surface and form an image on said photosensitive surface using chromatic aberration, each of the imaging lights having wavelength identical to one of said different wavelengths and being different from each other, the image processor being adapted to provide the control to produce, on a predetermined display, an image according to said signal received from said output means, said image data

processing method comprising below steps carried out by said computer comprising:

a step of receiving said signal;

a step of generating, according to received said signal,  
5 image data with which the same number of a plurality of images produced by the same kind of said elements can be produced on said display as the number of said elements; and

a step of sending, to the outside, generated said image data to said display means.

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21. A computer-readable program used in combination with an image processor having a computer, the image processor being used in combination with a camera comprising: an objective lens where an imaging light enters; image pickup means having a photosensitive  
15 surface that receives the imaging light directed after being passed through said objective lens to form an image, the photosensitive surface having different kinds of elements arranged in an array that are for generating predetermined signals in response to light in different wavelengths; and output means that sends, to the  
20 outside, received said signal, said objective lens being adapted to receive imaging lights from each of a plurality of subject surface segments located at different depths from said photosensitive surface and form an image on said photosensitive surface using chromatic aberration, each of the imaging lights having wavelength  
25 identical to one of said different wavelengths and being different from each other, the image processor being adapted to provide the control to produce, on a predetermined display, an image according to said signal received from said output means, the computer-readable program being for carrying out, by said computer, at least:



a processing of receiving said signal;

a processing of generating, according to received said signal, image data with which the same number of a plurality of images produced by the same kind of said elements can be produced on said display as the number of said elements; and

a processing of sending, to the outside, generated said image data to said display means.

22. An objective lens used in combination with a camera comprising image pickup means having a the photosensitive surface having different kinds of elements arranged in an array that are for generating predetermined signals in response to light in different wavelengths, the objective lens being disposed so that the imaging light directed therethrough is received by said image pickup means to form an image,

the objective lens being adapted to receive imaging lights from each of a plurality of subject surface segments located at different depths from said photosensitive surface and form an image on said photosensitive surface using chromatic aberration, each of the imaging lights having wavelength identical to one of said different wavelengths and being different from each other.